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ABSTRACT

An experiment was conducted at the University of Maryland at Baltimore to determine if performances would differ for registered nurses enrolled in a baccalaureate program in nursing depending on whether they participated in a flexible clinical scheduling (FLEX) program or in the traditional (non-FLEX) program. Fifty-four students took part in the study, with 18 students enrolled in the FLEX program and the remainder in the traditional program. The clinical course format consisted of the following activities in which all 54 students participated: large group lectures, clinical conferences, and student-teacher conferences. Students in both programs spent 13 hours in the clinical work setting each week providing nursing care to selected clients. At the end of each week, the students submitted nursing process records on each client to the instructor responsible for the evaluation of their clinical achievement. Records were checked by instructors and returned to students to guide their performance. The crucial variable distinguishing students in the FLEX program from those in the non-FLEX program was the absence of an instructor in the clinical setting. Students were evaluated at the end of the 12-week clinical experience using the Clinical Evaluation Tool. A regression factorial analysis of variance was performed on the data gathered by these evaluations. Results showed no significant difference between the clinical achievement scores of FLEX and non-FLEX students. Although these results replicated those of an earlier similar study, caution is urged and further study with a wider sample recommended before implementation of such a program on a wider scale. (KC)

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A Comparison of the Performance of Registered Nurse Students in Flexible and Traditional Clinical Courses.

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Presented at the Annual Conference of the Evaluation Network/Evaluation Research Society, Austin, Texas, October, 1981.

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Mary L. Wolfe

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Ever since American interest in adult education was aroused in the 1920's, attention has been given to the differences between it and the education of young people. Various approaches to the subject have been taken, the most frequent distinguishing between the characteristics of young and adult learners. Other distinctions have arisen from an effort to distinguish between maturity and immaturity. Still other distinctions have been based on the differences between the goals of children and those of adults, on methods of instruction, on the relevance of the learning to the affairs of life, on distinctions between full-time and part-time study, on the degree and kind of motivation, and on the extent to which study is voluntary (Houle, 1974).

Andragogy is a term introduced into the literature to describe the art and science of helping the adult to learn. Implicit in the assumption of andragogy is that the characteristics of the adult learner are different from the characteristics of the child learner. As a person matures, the self-concept moves from one of being a dependent personality toward one of being a self-directing being. A growing reservoir of experience accumulates that becomes an increasing resource for learning. Readiness to learn becomes oriented increasingly to the developmental task of the adult's social role. Time perspective changes from one of postponed application of knowledge to immediacy of application, and accordingly orientation toward learning shifts from one of subject-centeredness to one of problem-centeredness (Knowles, 1970).

Knowles lists nine competencies of self-directed learning:

1. Understanding of the differences in assumptions about learners and the skills required for learning under teacher-directed learning and self-directed learning, and the ability to explain these differences to others,

2. a concept of self as being a non-dependent and a self-directing person,
3. ability to relate to peers collaboratively, to see them as resources for diagnosing needs, planning own learning and learning; and to give help to them and receive help from them,
4. ability to diagnose own learning needs realistically with help from teachers and peers,
5. ability to translate learning needs into learning objectives in a form that makes it possible for their accomplishments to be assessed,
6. ability to relate to teachers as facilitators, helpers, or consultants, and to take the initiative in making use of their own resources,
7. ability to identify human and material resources appropriate to different kinds of learning objectives,
8. ability to select effective strategies for making use of learning resources and to perform those strategies skillfully and with initiative,
9. ability to collect and validate evidence of the accomplishment of various kinds of learning objectives.

Registered nurse students come from a wide age range, with varied nursing and life experiences, and will have different learning goals and needs. Each student has perceived a personal objective or goal that additional learning will help to achieve. This is not unlike the findings of Tough's (1968) early study of why adults learn. As determined in that study, the single most common and most important reason for adult learning was the desire to use or apply knowledge or skill. Commitment to an action goal such as producing, accomplishing, or doing something came first.

Then came the decision to learn certain knowledge and skills as one step toward achieving the action goal. Such a goal might be to understand some future situation better, to pass an examination or to impart the knowledge or skill to others. Certainly the learning environment must provide for these individual differences. It needs to be creative, to provide options and choices in learning experiences (Seawright, 1976). Learning is an internal process and those teaching strategies which involve the student most deeply in self-directed inquiry will produce the greatest learning. Students must be encouraged to identify their own learning objectives, participate in the selection of meaningful educational experiences and evaluate the outcomes of their endeavors. The role of faculty in this process is that of guide or facilitator.

Instructors of self-directed students should respect the mature goal-directed adults' capability to make responsible decisions about their learning. The teacher must recognize his role as one of facilitator, consultant, guide, resource person, and not only a transmitter of knowledge. A major responsibility of the educator is suggesting ways for students to identify relevant questions and possible solutions, to express personal feelings, and contribute sources as a colearner in the spirit of mutual inquiry (Rosendahl, 1974). The responsibility of the nurse educator is to develop an atmosphere which is devoid of those factors which block growth such as non-understanding of feelings, judgementalism and threat, and a lack of openness and genuineness.

Models exist that illustrate how some educators are experimenting in the education of registered nurses using the principles of adult learning. A case in point is the program at the University of Maryland School of Nursing where the registered nurse program is an integral part of an upper division generic nursing program.

As a basis for providing increased flexibility for registered nurse students enrolled at the University of Maryland School of Nursing, a study was undertaken to determine if R.N. students with self-directed learning competencies could achieve nursing course clinical objectives in their work setting without the presence of a clinical instructor (Sands, 1980). The study employed a matched pairs t-test design in which the matching variable was self-directed learner competency. The sample consisted of seventeen pairs of registered nurse students that were assigned to control and experimental groups according to their scores on the Self-Directed Learner Tool. The independent variable was the work setting without the instructor present (experimental) and clinical laboratory with the instructor present (control). The dependent variable was the attainment of course clinical objectives as measured by the approved Clinical Evaluation Tool. Analysis of the resulting scores, using a correlated t-test, revealed no significant difference ($t=1.50$ (16) $p > .05$) between the control ($\bar{x}=169.76$; S.D.$=8.25$) and experimental group ($\bar{x}=162.94$, S.D.$=11.51$) with respect to achievement on the Clinical Evaluation Tool. Therefore, it was concluded that use of work settings without an instructor present did not have a statistically significant effect on subjects' clinical grades.

Following the original study, descriptive data collected for three years after the flexible clinical scheduling program was implemented indicated that students in that program performed at least as well as those in the traditional program. However, this assessment did not take into account differences in grading practices among instructors. The present study is an attempt to control for this factor.

Methods

Sample.

Fifty-four registered nurses enrolled in a baccalaureate program in nursing participated in the study. They were taught by a total of five instructors in groups ranging in size from nine to twelve. Eighteen students were enrolled in the flexible clinical scheduling (FLEX) program; the remaining students were enrolled in the traditional (non-FLEX) program.

Procedure.

The clinical course format consisted of the following activities in which all 54 students participated:

a. Large group lectures. These four hour sessions were held each week for the purpose of providing a theoretical basis for clinical practice. Lectures were augmented by the use of films, slides, and videotapes.

b. Clinical conferences. These two hour sessions were held weekly. They consisted of an individual faculty member and the nine to twelve students whose clinical practice she was responsible for evaluating. The informal format of these conferences facilitated discussion of client problems, nursing process recordings and other course-related concerns. Clinical groups were comprised of students in the FLEX option and students in the non-FLEX option.

c. Student-teacher conferences. These were weekly opportunities for students to get feedback on their Nursing Process Records, discuss their achievement of course objectives, or confer with the clinical teacher on problems encountered that were unique to clinical settings in which they were practicing. The conferences were flexible and could be initiated by the student and/or instructor.

Each student in the FLEX and non-FLEX programs spent 13 hours in the clinical/work setting each week providing nursing care to selected clients. At the end of each week, the students submitted nursing process records on each client to the instructor responsible for the evaluation of their clinical achievement. The records were returned to the students at the beginning of the following week along with an assessment or anecdotal note of the student's movement toward achieving the course clinical objectives. Comments made by the instructor were intended to be used by the students to guide their performance of client activities.

The crucial variable distinguishing students in the FLEX program from those in the non-FLEX program was the absence of an instructor in the clinical setting.

At the midpoint in the semester, a formal systematic evaluation of each student was carried out by each instructor using the Clinical Evaluation Tool. The evaluation terminated in a score which enabled the student to gauge personal performance as satisfactory or in need of improvement. Each student was responsible for submitting a self-evaluation at midterm. These evaluations were discussed in private conference and a notation was made by the student and teacher about the student's progress.

At the completion of the 12-week clinical experience, the instructors computed a clinical achievement grade for each student using the Clinical Evaluation Tool. The final clinical achievement grades were used as data in the present study.

Results

A 2 x 5 regression factorial analysis of variance (type of program by instructor) was performed on the data. Results are shown in Table 1.

Table 1

Cell, Row and Column Means of Final Clinical Achievement Scores

		Instructor					
		1	2	3	4	5	
Type of Program	FLEX	126.0 n=3	137.8 n=5	145.0 n=2	157.0 n=4	174.3 n=4	149.0
	non-FLEX	151.8 n=9	154.3 n=6	160.3 n=7	151.3 n=7	171.7 n=7	157.6
		143.3	146.8	156.9	153.4	172.6	

Although the mean clinical achievement scores for the FLEX students were somewhat lower than those for the non-FLEX students, the difference was not significant ($p > .05$). In groups 1, 2 and 3, the non-FLEX students' scores were higher than those of the FLEX students; in groups 4 and 5 the difference was in the opposite direction. This interaction was not significant, however and was omitted from the model in subsequent analyses. There was a significant ($p < .01$) main "instructor effect" with mean ratings ranging from 143.3 to 172.6. (Table 2)

Table 2

Analysis of Variance Summary Table

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif. of F
Main Effects	6301.837	5	1260.367	3.873	.005
Var 1	964.249	1	964.249	2.963	.092
Var 2	5406.272	4	1351.568	4.153	.006
Explained	6301.837	5	1260.367	3.873	.005
Residual	15622.030	48	325.459		
Total	21923.866	53	413.658		

Discussion

The results of the present study must be interpreted with considerable caution. The sample was small and non-representative. The factorial ANOVA design employed was decidedly non-orthogonal, and the null hypothesis of no difference between FLEX and non-FLEX student performance was retained by a fairly narrow margin. However, the findings of Sands' study were supported: in each case the FLEX students' mean clinical performance scores were lower by a non-significant amount, varying from 6.8 to 8.6 scale points.

It is difficult, in a post-hoc examination of data such as those in the present study, to measure precisely the effect of differing instructor expectations and performance standards on the relative ratings given the two groups and to control for it. Examination of Table 1 shows that mean clinical performance ratings do indeed differ across instructors, with some giving higher ratings to the FLEX students and others giving lower ratings. Sands found the interrater reliability of the Clinical Evaluation Tool to be somewhat lower than that generally recommended for such instruments. Further investigation in that area is certainly indicated.

Two observations should be made at this point. The data from two additional instructors, one group consisting of 11 FLEX students and the other of 11 non-FLEX students, were not included in the factorial ANOVA. An independent-groups t-test showed that the FLEX group, with a mean of 164.0, scored significantly higher ($p < .02$) than the non-FLEX group, with a mean of 145.4. This result is difficult to interpret, however, since it is not clear whether it represents superior performance on the part of the FLEX students or systematic instructor bias. In addition, if the data from these two groups are added to the original group of 54 students, and the pooled data simply examined descriptively, there is virtually no difference between the mean scores for the FLEX (154.7) and non-FLEX (154.8) students.

Given the difficulty of conducting carefully controlled experimental studies in field settings, continuing investigation of the relative clinical performance ratings of FLEX and non-FLEX students in a variety of settings should be carried out. If the results replicate over a series of studies, valid conclusions may eventually be drawn. At the present time it appears that flexible clinical scheduling may provide a viable (although not necessarily superior) alternative for the registered nurse wishing to obtain a baccalaureate degree. As the impetus toward making the baccalaureate degree in nursing the required credential for professional nursing practice is accelerated, increased pressure may be placed on faculty in collegiate nursing programs to look for newer models upon which to base curriculum designs in order to facilitate registered nurses' attainment of the BSN.

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UNIVERSITY OF MARYLAND
SCHOOL OF NURSING
N - 335 Concepts of Nursing IV - A Student: _____
WORKSHEET FOR CLINICAL EVALUATION TOOL
BEHAVIOR LIST Date: _____
Fall, 1980

	Deficient	Passing	Above Average	Excellent	Comments
I. Professional Development		(13B) *	(5B) *	(4B) *	
	1. ___	1. ___	1. ___	1. ___	
	2. ___	2. ___	2. ___	2. ___	
	3. ___	3. ___	3. ___	3. ___	
	4. ___	4. ___	4. ___	4. ___	
	5. ___	5. ___	5. ___		
	6. ___	6. ___			
	7. ___	7a. ___			
	8. ___	7b. ___			
	9. ___	8. ___			
	10. ___	9. ___			
	11. ___	10. ___			
		11. ___			
		12. ___			
II. Nurse/Client Relationships		(9B)	(6B)	(4B)	
	1. ___	1. ___	1. ___	1. ___	
	2. ___	2. ___	2. ___	2. ___	
	3. ___	3. ___	3. ___	3. ___	
	4. ___	4. ___	4. ___	4. ___	
	5. ___	5. ___	5. ___		
	6. ___	6. ___	6. ___		
	7. ___	7. ___			
	8. ___	8. ___			
	9. ___	9. ___			
	10. ___				
	11. ___				
	12. ___				
	13. ___				
III. Group Process (Omit)					
IV. Member of the Health Team		(4B)	(5B)	(5B)	
	1. ___	1. ___	1. ___	1. ___	
	2. ___	2. ___	2. ___	2. ___	
	3. ___	3. ___	3. ___	3. ___	
	4. ___	4. ___	4. ___	4. ___	
	5. ___		5. ___	5. ___	
V. Data Collection		(12B)	(4)	(5B)	
	1. ___	1. ___	1. ___	1. ___	
	2. ___	2a. ___	2. ___	2a. ___	
	3. ___	2b. ___	3. ___	2b. ___	
	4. ___	2c. ___			
	5. ___	3. ___		3. ___	
	6. ___	4. ___			
		5. ___			
	1. ___	1. ___	1. ___	1. ___	
	2. ___	2. ___			
	3. ___	3. ___			
	4. ___	4. ___			
	5. ___	5. ___			

NOTE: * (B) indicates total number of behaviors within each level of performance for the specific course objective. e.g., I. Professional Development - 13 behaviors in passing level.

Student_____

	Deficient	Passing	Above Average	Excellent	Comments
VI. Data Analysis		(9 B)	(6B)	(6B)	
	1 ___	1. ___	1. ___	1. ___	
	2. ___	2. ___	2. ___	2. ___	
	3. ___	3. ___	3. ___	3a. ___	
	4. ___	4. ___	4. ___	3b. ___	
	5. ___	5. ___	5. ___	4a. ___	
	6. ___	6a. ___	6. ___	4b. ___	
	7. ___	6b. ___			
	8. ___	7a. ___			
		7b. ___			
VII. Behavioral Objectives		(7B)	(4 B)	(1B)	
	1a. ___	1. ___	1a. ___	1. ___	
	1b. ___	2. ___	1b. ___		
	1c. ___	3. ___	1c. ___		
	1d. ___	4. ___	1d. ___		
	2. ___	5. ___			
	3. ___	6. ___			
	4. ___	7. ___			
	5. ___				
	6. ___				
	7. ___				
VIII. Planned Nursing Actions and Rationale		(10B)	(10B)	(10B)	
	1. ___	1a. ___	1a. ___	1a. ___	
	2. ___	1b. ___	1b. ___	1b. ___	
	3. ___	1c. ___	1c. ___	1c. ___	
	4. ___	1d. ___	1d. ___	1d. ___	
	5. ___	1e. ___	1e. ___	2a. ___	
	6. ___	2. ___	2a. ___	2b. ___	
	7. ___	3. ___	2b. ___	3a. ___	
	8. ___	4. ___	2c. ___	3b. ___	
		5. ___	3. ___	3c. ___	
		6. ___	4. ___	4. ___	
IX. Implementation of Planned Nursing Actions		(16B)	(5B)	(5B)	
	1. ___	1. ___	1. ___	1. ___	
	2. ___	2. ___	2. ___	2. ___	
	3. ___	3. ___	3. ___	3. ___	
	4. ___	4. ___	4. ___	4. ___	
	5. ___	5. ___			
	6. ___	6. ___			
	7. ___	7. ___			
	8. ___	8. ___			
	9. ___				
	1. ___	1. ___	1. ___	1. ___	
	1. ___	1. ___			
	2. ___	2. ___			
	3a. ___	3. ___			
	3b. ___	4. ___			
	3c. ___				
	3d. ___				
	3e. ___	1. ___			
	4. ___	2. ___			
	5. ___	3. ___			
	1. ___				
	2. ___				
	3. ___				

	Deficient	Passing	Above Average	Excellent	Comments
X.	Evaluation of Nursing Process				
		(5B)	(5B)	(4B)	
	1. ____	1. ____	1a. ____	1. ____	
	2. ____		1b. ____	2. ____	
	3. ____	3a. ____	2. ____	3. ____	
		3b. ____	3. ____	4. ____	
		3c. ____	4. ____		
		4. ____			

Grand Total	Total Passing	Total Above Average	Total Excellent
179 Behaviors (raw score)	85 B	50 B	44 B

Point Determination
Clinical Evaluation Tool
C grade - raw score 85-110
points 110 - 145.25
B grade - raw score 111-157
points 146.6 - 182.5
A grade - raw score 158-179
points 183. 3 - 220

INSTRUCTOR_____

DATE_____